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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Fargo, Richard
Serial Number: 10/564,873
Filed: 01/17/2006
Group Art Unit: 3654
Examiner: Kruer, Stefan
Title: SHOCK ABSORBING HITCH

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant now submits its brief in this appeal. A Credit Card Payment Form in the amount of \$500.00 is attached.

Real Party in Interest

The real party in interest is Otis Elevator Company. Otis Elevator Company is a business unit of United Technologies Corporation.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of the Claims

Claims 1-20 are pending. Claims 1-12, 17 and 19 are on appeal.¹

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¹ Applicant is willing to amend the application to rewrite claims 17 and 19 in independent form responsive to receiving a favorable decision regarding the patentability of those claims.

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Claims 1-7, 9 and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,750,945 (*Fuller* '945).

Claims 8 and 17-19 stand rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 and further in view of U.S. Patent No. 6,216,824 (*Fuller* '824).

Claim 10 stands rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 in view of U.S. Patent No. 6,123,176 (*O'Donnell, et al.*).

Claim 11 stands rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 in view of U.S. Patent No. 6,234,276 (*Wagatsuma, et al.*).

Status of Amendments

There are no unentered amendments.

Summary of Claimed Subject Matter

Independent claim 1 follows:

1. An elevator system, comprising:
 - a car;
 - a counterweight;
 - a load bearing member supporting the car and the counterweight such that the car moves in one direction and the counterweight moves in an opposite direction; and
 - a termination associated with at least one end of the load bearing member, at least a portion of the termination moving against a first bias of the termination responsive to a tension on the load bearing member that is below a selected threshold and moving against a second, passive bias of the termination responsive to a tension that exceeds the threshold.

Figures 1 -4 show an example arrangement upon which claim 1 reads. Figure 1 shows an elevator system 20 including a car 22 and a counterweight 24. A load bearing member 26 supports the car 22 and counterweight 24 for desired movement in a hoistway. (Page 4, lines 2-4) A termination 40 is associated with one end of the load bearing member 26. (Page 4, lines 10-11)

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As best appreciated from Figure 3, at least a portion of the termination, which includes locking members 64 and terminating members 52 having ends 63 in the illustrated example, moves against a first bias provided by a first biasing member 62 responsive to a tension on the load bearing member that is below a selected threshold 78 as shown in Figure 4. (Page 4, line 20; page 5, lines 3-11; page 5, line 26-page 6, line 1) Another portion of the termination 40, which includes a selectively moveable support member 60, moves against a second, passive bias, which is provided by springs 70 in the example of Figure 3, responsive to a tension on the load bearing member 26 that exceeds the threshold 78. (Page 5, line 12 – page 6, line 3)

Claim 17 provides that the terminating member is moveable relative to the guide structure responsive to a first force that opposes the bias of the first biasing member and the support member is moveable with the terminating member against the bias of the second biasing member responsive to a second, greater force.² The figures show a support member 60 that is associated with the terminating member (e.g., at least one of the terminating members 52). A first biasing member (e.g., the springs 62) acts against one side of the support member 60 while a second, passive biasing member (e.g., springs 70) act against an opposite side of the support member 60.

² Claim 17 depends from claim 16, which depends from claim 13. Claims 13 and 16 recite:

13. A hitch device for securing an end of a load bearing member in an elevator system, comprising:

- a terminating member that is adapted to be secured to a load bearing member;
- a support member associated with the terminating member;
- a first biasing member acting against one side of the support member to bias one end of the terminating member away from the support member; and
- a second, passive biasing member acting against an opposite side of the support member, the second biasing member being adapted to bias the support member away from a selected stationary surface.

16. The device of claim 13, including a guide structure that guides the support member for selective movement against the bias of the second biasing member, the guide structure including a stationary surface against which the second biasing member acts such that the support member is selectively moveable relative to the guide structure.

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The terminating member 52 in the illustrated example moves against a first bias provided by the first biasing member 62 responsive to a tension on the load bearing member (e.g., a first force) that is below a selected threshold 78 as shown in Figure 4. (Page 4, line 20; page 5, lines 3-4; page 5, line 26-page 6, line 1) The terminating member 52 of the termination 40 moves against a second, passive bias, which is provided by springs 70 in the example of Figure 3, responsive to a tension on the load bearing member 26 that exceeds the threshold 78 (e.g., a second, greater force). (Page 5, line 32 – page 6, line 3) (Page 4, line 27 – page 5, line 16).

Claim 19 depends from claim 13 and provides that the first biasing member has a first stiffness and the second biasing member has a second, lower stiffness. (Page 5, lines 26-28)

Grounds of Rejection to be Reviewed on Appeal

Claims 1-7, 9 and 12 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,750,945 (*Fuller* '945).

Claims 8, 17 and 19 stand rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 and further in view of U.S. Patent No. 6,216,824 (*Fuller* '824).

Claim 10 stands rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 in view of U.S. Patent No. 6,123,176 (*O'Donnell, et al.*).

Claim 11 stands rejected under 35 U.S.C. §103 as being unpatentable over *Fuller* '945 in view of U.S. Patent No. 6,234,276 (*Wagatsuma, et al.*).

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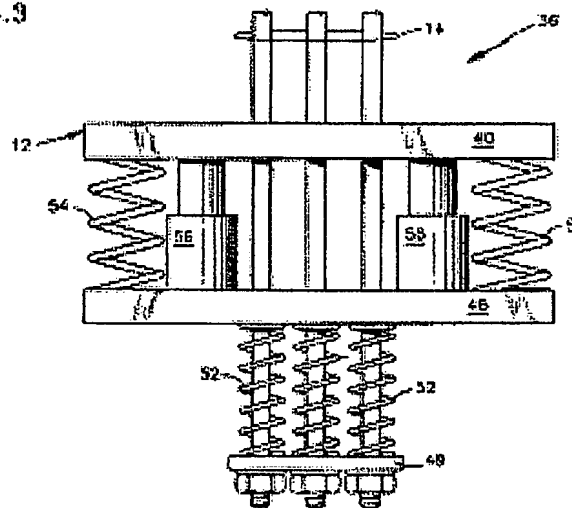
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ARGUMENT

The rejection of claims 1-7, 9 and 12 under 35 U.S.C. §102(b) based upon the Fuller '945 reference must be reversed.

The Fuller '945 reference does not teach what the Examiner suggests is found within the Fuller '945 reference. Figure 3 of the Fuller '945 reference is reproduced here.

FIG. 3



The Examiner suggests that the Fuller '945 reference discloses a mounting plate 49 that moves against a first bias 52 of a termination responsive to a tension on a load bearing member 14 that is below a selected threshold and the portion 49 moves against a second, passive bias 54 of the termination responsive to a tension that exceeds the threshold. (See, e.g., page 2 of the Final Office Action).

Basically, the Examiner contends that the Fuller '945 reference teaches that the springs 52 will compress when tension on the ropes 14 is below a selected threshold and then the springs 54 will compress when the tension exceeds that threshold. The problem with the Examiner's

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position is that the *Fuller* '945 reference does not in any way disclose that. The only description regarding the springs 52 and 54 in the *Fuller* '945 reference is found in column 4, lines 41-58:

Positioned between the mounting plates 49 and the hitch plate 46 are a plurality of passive hitch spring elements 52. In the illustrated example, the passive hitch spring elements 52 positioned between the hitch plate 46 and mounting plates 49 each have one of the steel ropes which make up the main rope 14 passing therethrough. The passive hitch spring elements 52 provide even tension in the steel ropes which make up the main rope.

Positioned between the hitch plate 46 and the support plate 40 are a pair of passive hitch spring elements 54 and a pair of active elements 56 which together with the hitch plate 46 form the active elevator hitch of the present invention. The passive hitch spring elements 54 provide partial support for the elevator car so that the active elements 56 do not need to support the static load of the elevator car. However, depending on the active elements 56 used to implement the active elevator hitch of the present invention, the passive hitch spring elements 54 may be eliminated.

and column 8, lines 20-26:

The active hitch assembly 36 is illustrated in Fig. 3 as including passive damping elements connected both in series (passive hitch spring elements 52) and in parallel (passive hitch spring elements 54) with the active elements 56. However, the invention will work equally as well with passive damping elements connected in series and/or in parallel with the active elements 56.

There is no other description of the springs 52 or 54 within the *Fuller* '945 reference. It is clear from the reference itself that there is nothing in it to suggest that the springs 52 and 54 operate in the manner proposed by the Examiner. The reference simply does not support the Examiner's interpretation. The springs 52 and 54 would have to operate in the manner proposed by the Examiner in order to even begin to establish a *prima facie* case of anticipation. The Examiner's position is not supported by the reference and there is no *prima facie* case of anticipation.

Without any teaching in the *Fuller* '945 reference regarding how the springs 52 and 54 would be compressed responsive to different tensions as recited in Applicant's claim 1, there is

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no anticipation. There is nothing within the *Fuller* '945 reference that can support the Examiner's position and the rejection must be reversed.

The rejection of claims 8, 17 and 19 under 35 U.S.C. §103 based upon the proposed combination of the *Fuller* '945 and *Fuller* '824 references must be reversed.

A. Claim 8 is allowable.

The rejection of claim 8 relies upon the same improper interpretation of the *Fuller* '945 reference described above. Because that reference does not teach what the Examiner contends, even if the combination could be made, the result is not what the Examiner contends. Therefore, there is no *prima facie* case of obviousness.

B. Claim 17 is allowable.

The Examiner does not expressly explain how the limitations of claim 17 are found in the proposed combination of the *Fuller* '824 and the *Fuller* '945 references. In any event, the combination cannot be made. The *Fuller* '824 reference includes a semi-active arrangement including cylinders 42 that are intended to provide an initial "lifting" force to the elevator car 12 relative to the cable 14 of that reference. There is no basis for inserting that kind of arrangement into the *Fuller* '945 reference in place of the springs 54, which the Examiner would have to do to even begin to explain how there is supposedly some sort of *prima facie* case of obviousness. The significantly different type of operation of the cylinders 42 compared to the springs 54 renders them unable to be substituted for each other. The springs 54 in the *Fuller* '945 reference are optionally included for the reasons quoted above and there would be no benefit to replacing them with the cylinders 42 of the *Fuller* '824 reference. Without any compatibility between them and no benefit to making such a modification, there is no *prima facie* case of obviousness because the proposed combination cannot be made.

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C. Claim 19 is allowable.

The combination cannot be made as just explained. Additionally, even if it could be made, the references do not teach what the Examiner contends and there is no *prima facie* case of obviousness. The Examiner seems to rely upon the statement in the *Fuller* '824 patent that the cylinders 42 are "soft" as a teaching of relative spring stiffness corresponding to what is recited in claim 19. The problem with that analysis is that is not what the *Fuller* '824 reference actually teaches. Instead, it teaches, "The accumulator 50 is pressurized with nitrogen gas or the like, to a pressure sufficient to apply a pressure to the hydraulic circuit 47 such that the pistons 42B are normally biased to a mid-range position in the cylinders and thereby serve as a soft spring for providing an initial 'lifting' force to the elevator car 12 relative to the cable 14." (Col. 5, lines 28-34) Even if the *Fuller* '824 arrangement could somehow be substituted in for the springs 54 of the *Fuller* '945 reference, the result would not be what the Examiner contends. There is nothing in either reference that teaches the limitations of claim 19 and there is no *prima facie* case of obviousness.

The rejection of claim 10 under 35 U.S.C. §103 based upon the proposed combination of the *Fuller* '945 reference and the *O'Donnell, et al.* reference must be reversed.

The Examiner's proposed modification of the *Fuller* '945 reference cannot be made because it goes contrary to the express teachings of the reference and would render it incapable of performing its intended function. The Examiner proposes to take some of the elements of the arrangement in the *Fuller* '945 reference away from an elevator car location and place them on a counterweight. The *Fuller* '945 reference, however, discloses an arrangement that is particularly designed for use with an elevator car to address the elevator motion control strategy explained in

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that reference. If one were to remove the termination from the car and place it on the counterweight, the intended result of the *Fuller* '945 reference could not be achieved. Such a proposed modification to a reference that defeats its intended operation cannot be made and there is no *prima facie* case of obviousness. The proposed combination of the *Fuller* '945 reference and the *O'Donnell, et al.* reference cannot be made.

Additionally, the Examiner's interpretation of the *Fuller* '945 reference is incorrect and even if the combination could be made, the result is not what the Examiner contends. The rejection of claim 10 must be reversed.

The rejection of claim 11 under 35 U.S.C. §103 based upon the proposed combination of the *Fuller* '945 reference and the *Wagatsuma, et al.* reference must be reversed.

The combination of the *Fuller* '945 reference and the *Wagatsuma, et al.* reference cannot be made at least in part because the *Fuller* '945 reference intentionally locates components on an elevator car to achieve a desired elevator car motion control. If one were to take the Examiner's suggestion and remove some of those components to place them in a fixed position relative to a machine in a machine room, for example, the intended result of the *Fuller* '945 reference would not be achievable. Such a modification to a reference cannot be made when attempting to establish a *prima facie* case of obviousness. In this instance, the rejection must be reversed because the proposed combination of the *Fuller* '945 reference and the *Wagatsuma, et al.* reference cannot be made.

Additionally, the Examiner's interpretation of the *Fuller* '945 reference is incorrect and even if the combination could be made, the result is not what the Examiner contends. The rejection of claim 11 must be reversed.

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CONCLUSION

The Examiner's interpretation of the *Fuller* '945 reference is not supported by the reference. The proposed combinations made by the Examiner are not possible for attempting to establish a *prima facie* case of obviousness under 35 U.S.C. §103 because they would render the primary reference incapable of achieving its intended effect. The rejections of claims 1-12, 17 and 19 must be reversed.

Respectfully submitted,

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May 7, 2007
Date

CERTIFICATE OF FACSIMILE

I hereby certify that this Appeal Brief relative to Application Serial No. 10/564,873, is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on May 7, 2007.


Theresa M. Palmateer

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APPENDIX OF CLAIMS

1. An elevator system, comprising:
a car;
a counterweight;
a load bearing member supporting the car and the counterweight such that the car moves in one direction and the counterweight moves in an opposite direction; and
a termination associated with at least one end of the load bearing member, at least a portion of the termination moving against a first bias of the termination responsive to a tension on the load bearing member that is below a selected threshold and moving against a second, passive bias of the termination responsive to a tension that exceeds the threshold.
2. The system of claim 1, wherein the termination includes a terminating member and a support member and wherein the terminating member moves relative to the support member responsive to the tension below the threshold and wherein the support member moves with the terminating member when the tension exceeds the threshold.
3. The system of claim 2, including a damper that resists movement of the support member and wherein the damper at least partially absorbs the tension.
4. The system of claim 3, wherein the damper comprises at least one of a mechanical spring, an air spring or a pressurized actuator.
5. The system of claim 3, wherein the damper is preloaded a selected amount such that the damper prevents movement of the support member when the tension on the load bearing member is less than the selected threshold.

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6. The system of claim 2, wherein the terminating member and the support member are moveable relative to a stationary surface and wherein the termination includes a tension member near an end of the terminating member that is distal from the load bearing member between the distal end and the support member, the tension member biasing the distal end away from the support member and a damper on an opposite side of the support member between the support member and the stationary surface, the damper biasing the support member away from the stationary surface.
7. The system of claim 6, wherein the tension member comprises a spring and the damper comprises at least one of a mechanical spring, an air spring, a pneumatic actuator or a hydraulic actuator.
8. The system of claim 7, wherein the support member comprises a plank and including a guide structure fixed relative to the stationary surface, the guide structure supports the plank such that the plank is moveable toward the stationary surface when the tension exceeds the threshold.
9. The system of claim 1, wherein the termination is supported for movement with the car.
10. The system of claim 1, wherein the termination is supported for movement with the counterweight.
11. The system of claim 1, including a machine that causes selective movement of the car and wherein the termination is in a fixed position relative to the machine.
12. The system of claim 1, including a first biasing member that provides the first bias and a second biasing member that provides the second bias and is located remote from the first biasing member.

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17. The device of claim 16, wherein the terminating member is moveable relative to the guide structure responsive to a first force that opposes the bias of the first biasing member and the support member is moveable with the terminating member against the bias of the second biasing member responsive to a second, greater force.³

19. The device of claim 13, wherein the first biasing member has a first stiffness and the second biasing member has a second, lower stiffness.³

³ Claim 17 depends from claim 16, which depends from claim 13. Claim 19 depends from Claim 13. Claims 13 and 16 are reproduced here for convenience:

13. A hitch device for securing an end of a load bearing member in an elevator system, comprising:
a terminating member that is adapted to be secured to a load bearing member;
a support member associated with the terminating member;
a first biasing member acting against one side of the support member to bias one end of the terminating member away from the support member; and
a second, passive biasing member acting against an opposite side of the support member, the second biasing member being adapted to bias the support member away from a selected stationary surface.

16. The device of claim 13, including a guide structure that guides the support member for selective movement against the bias of the second biasing member, the guide structure including a stationary surface against which the second biasing member acts such that the support member is selectively moveable relative to the guide structure.

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EVIDENCE APPENDIX

None.

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RELATED PROCEEDINGS APPENDIX

None.

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